

From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION CONCERNING  
 TRANSMITTAL OF COPY OF INTERNATIONAL  
 PRELIMINARY REPORT ON PATENTABILITY  
 (CHAPTER I OF THE PATENT COOPERATION  
 TREATY)  
 (PCT Rule 44bis.1(c))

Date of mailing (day/month/year)  
 20 August 2009 (20.08.2009)

**R E C E I V E D**  
 AUG 31 2009

Applicant's or agent's file reference  
 ART034PCT

GROSSMAN, TUCKER,  
 PERREAULT & PFLEGER, PLLC

**IMPORTANT NOTICE**

International application No.  
 PCT/US2008/053194

International filing date (day/month/year)  
 06 February 2008 (06.02.2008)

Priority date (day/month/year)  
 06 February 2007 (06.02.2007)

Applicant

ARTHROSURFACE INCORPORATED et al

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO  
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# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference ART034PCT	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. PCT/US2008/053194	International filing date ( <i>day/month/year</i> ) 06 February 2008 (06.02.2008)	Priority date ( <i>day/month/year</i> ) 06 February 2007 (06.02.2007)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant ARTHROSURFACE INCORPORATED		

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td><td>Box No. I</td><td>Basis of the report</td></tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td><td>Box No. II</td><td>Priority</td></tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td><td>Box No. III</td><td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td></tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td><td>Box No. IV</td><td>Lack of unity of invention</td></tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td><td>Box No. V</td><td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td></tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td><td>Box No. VI</td><td>Certain documents cited</td></tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td><td>Box No. VII</td><td>Certain defects in the international application</td></tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td><td>Box No. VIII</td><td>Certain observations on the international application</td></tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input checked="" type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 338 82 70</p>	<p>Date of issuance of this report 11 August 2009 (11.08.2009)</p> <p>Authorized officer <b>Philippe Becamel</b> e-mail: pt12.pct@wipo.int</p>
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# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
EDMUND P. PFLEGER  
GROSSMAN, TUCKER, PERREAU &  
PFLEGER, PLLC  
55 SO. COMMERCIAL STREET  
MANCHESTER, NH 03101

**PCT**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) **01 OCT 2008**

Applicant's or agent's file reference <b>ART034PCT</b>	<b>FOR FURTHER ACTION</b> See paragraph 2 below	
International application No. <b>PCT/US 08/53194</b>	International filing date (day/month/year) <b>06 February 2008 (06.02.2008)</b>	Priority date (day/month/year) <b>06 February 2007 (06.02.2007)</b>
International Patent Classification (IPC) or both national classification and IPC <b>IPC(8) - A61F2/38 (2008.04)</b> USPC - <b>623/20.14</b>		
Applicant <b>ARTHROSURFACE INCORPORATED</b>		

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Date of completion of this opinion <b>25 September 2008 (25.09.2008)</b>	Authorized officer: <b>Lee W. Young</b> PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774
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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 08/53194

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:  
 the international application in the language in which it was filed.  
 a translation of the international application into \_\_\_\_\_ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2.  This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of:
  - a. type of material  
 a sequence listing  
 table(s) related to the sequence listing
  - b. format of material  
 on paper  
 in electronic form
  - c. time of filing/furnishing  
 contained in the international application as filed  
 filed together with the international application in electronic form  
 furnished subsequently to this Authority for the purposes of search
4.  In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 08/53194

Box No. IV Lack of unity of invention

1.  In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the applicable time limit:
  - paid additional fees
  - paid additional fees under protest and, where applicable, the protest fee
  - paid additional fees under protest but the applicable protest fee was not paid
  - not paid additional fees
2.  This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is:
  - complied with
  - not complied with for the following reasons:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I: Claims 1-16

Group II: Claims 17-22

Group III: Claims 23-28

The inventions listed as Groups I, II and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of Group I is an implant having a number of tangential curves

The special technical feature of Group II is a drill guide with a number of spaced bushings

The special technical feature of Group III is a measuring device with a guide pin

None of these technical features are common to the other groups, nor do they correspond to a special technical feature in the other groups.

Thus, unity of invention is lacking under PCT Rule 13 because the groups do not share a same or corresponding special technical feature.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

- all parts
- the parts relating to claims Nos. 1-16

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

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Box No. V **Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	NONE	YES
	Claims	1-16	
Inventive step (IS)	Claims	NONE	YES
	Claims	1-16	
Industrial applicability (IA)	Claims	1-16	YES
	Claims	NONE	

2. Citations and explanations:

Claims 1-16 lack novelty under PCT Article 33(2) as being anticipated by US 2006/0020343 A1 to Ek (hereinafter "Ek").

In regards to claim 1, Ek teaches an implant for replacing a portion of an articular surface of a femoral condyle comprising: first, second, and third segments, wherein said second and said third segments partially overlap said first segment on opposing ends of said first segment, said first, said second, and said third segments comprise a bone contacting surface and a load bearing surface (para [0125]), said load bearing surface comprising an anterior-posterior (AP) curvature and a medial lateral (ML) curvature, wherein said AP curvature comprises at least two tangential curves of said portion of said articular surface of said femoral condyle (para [0126]), said tangential curves having different radii of curvature (para [0113]-[0121]).

In regards to claim 2, Ek teaches that said first, said second, and said third segments each comprise a truncated, generally circular shape (para [0107]).

In regards to claim 3, Ek teaches that said first, said second, and said third segments each comprise a generally circular shape truncated along said AP curvature of said implant (para [0126]).

In regards to claim 4, Ek teaches that said first, said second, and said third segments each comprise a generally circular shape truncated along said ML curvature of said implant (para [0126]).

In regards to claim 5, Ek teaches that said bone contacting surface comprises at least one mounting feature configured to secure said implant to said femoral condyle (para [0113]).

In regards to claim 6, Ek teaches that said at least one mounting feature is configured to securely engage with a mounting screw (para [0051], [0098], [0103], and [0119]).

In regards to claim 7, Ek teaches that said at least one mounting feature includes an opening configured to engage with a post of said mounting screw (para [0051], [0098], [0103], and [0119]).

In regards to claim 8, Ek teaches that said first, said second, and said third truncated, generally circular segments comprise first, second, and third axes extending through respective centers of said segments, respectively, wherein said first axis is substantially normal to said portion of said articular surface (para [0095]-[0105]).

In regards to claim 9, Ek teaches that said second and said third axes are substantially normal to said portion of said articular surface (para [0095]).

In regards to claim 10, Ek teaches that a first angle  $\alpha_1$  between said first axis and said second axis and a second angle  $\beta_1$  between said first axis and said third axis are substantially symmetrical (para [0126]).

In regards to claim 11, Ek teaches a method of forming an implant for replacing a portion of an articular surface extending across at least two tangential curves of a femoral condyle, said tangential curves having different radii of curvature (para [0098] and [0116]); said method comprising: establishing a reference axis extending substantially normal to a point of origin on said portion of said articular surface (para [0092]); establishing a reference plane that is parallel to a tangential plane extending through said point of origin on said articular surface (para [0097]); measuring a first distance between said reference plane and a first point on said articular surface at a distance  $R_1$  along an anterior-posterior (AP) curvature of said portion of said articular surface from said reference axis (para [0126]); measuring a second distance between said reference plane and a second point on said articular surface at a distance  $R_2$  along said AP curvature of said portion of said articular surface from said reference axis, wherein  $R_1$  is less than  $R_2$  (para [0095]-[0105] and [0126]); and providing an implant body having a load bearing surface, said load bearing surface comprising a first curvature approximating said at least two tangential curves of said portion of said articular surface based on said first and said second distances (para [0098] and [0116]).

---Please see continuation box

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 08/53194

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:  
Box V (2):

In regards to claim 12, Ek teaches that providing an implant comprising a first, second, and third segment, wherein said second and said third segments partially overlap said first segment on opposing ends of said first segment, said first, said second, and said third segments comprise said bone contacting surface and a load bearing surface (para [0123]-[0125]).

In regards to claim 13, Ek teaches that said first, said second, and said third segments comprise a first, a second, and a third axis extending through a center of a respective one of said segments, respectively, and wherein a first angle  $\alpha_1$  between said first axis and said second axis and a second angle  $\beta_1$  between said first axis and said third axis are substantially symmetrical (para [0126]).

In regards to claim 14, Ek teaches that measuring at least two distances between said reference plane and a third and fourth point on said articular surface at a distance along a medial-lateral (ML) curvature of said portion of said articular surface from said reference axis (para [0095] and [0126]); and providing said load bearing surface comprising a second curvature approximating said ML curvature of said portion of said articular surface (para [0095] and [0126]).

In regards to claim 15, Ek teaches that said first curvature approximating said at least two tangential and different curves of said articular surface is determined based on only said first and said second distances taken at distances  $R_1$  and  $R_2$ , respectively, from the reference axis (para [0095]-[0105]).

In regards to claim 16, Ek teaches that measuring two points at a distance  $R_2$  along said AP curvature of said portion of said articular surface from said reference axis, wherein one of said two points is taken at a point anterior from said reference axis and said other said two points is taken at a point posterior from said reference axis (para [0095]-[0105]).

Claims 1-16 have industrial applicability as defined by PCT Article 33(4), because the subject matter can be made or used in industry.